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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,401	01/29/2004	Willem Mostert	AUROR1190-1	2873
38396	7590	06/08/2009		
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EXAMINER				
PASCAL, LESLIE C				
ART UNIT		PAPER NUMBER		
2613				
MAIL DATE		DELIVERY MODE		
06/08/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/767,401

Applicant(s)

MOSTERT ET AL.

Examiner

Leslie Pascal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 19-26, 34, 42-44, 54-58, 60, 62 and 66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 19-26, 34, 42-44, 54-58, 60, 62 and 66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. A different examiner is handling this case. Please address all correspondence to Leslie Pascal.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12, 19-25, 34, 44, 54-56 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: The applicant appears to be claiming two completely separate systems that are not connected in any way. For example, in claim 12 the first system is made up of an upstream combiner, a downstream combiner and an optical signal conductor. The second system is made up of another upstream combiner, another downstream combiner and another optical signal conductor. In claim 54 the first system is made up of an upstream combiner, a downstream combiner, an add device, a customer premises equipment digital receiver output, an output optical connector, an analog broadcast receiver and an optical signal conductor. The second system is made up of another upstream combiner, another downstream combiner, a drop device, a customer premises equipment digital receiver input, an input optical connector, and another optical signal conductor. The two systems, as claimed, are not connected to each other in any way.

4. The proposed drawing corrections were received on 4-10-09. These drawings are accepted but informal. There are handwritten elements.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because there are handwritten elements. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12, 19-25, 34, 44, 54, 57-58 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fussganger et al (4957339).

Fussganger et al teach an upstream combiner (figure 4, element 22), a downstream combiner (figure 4, 23), an optical conductor (figure 4, 1), another upstream combiner (figure 5, element 22), another downstream combiner (figure 5, 23), an optical conductor (figure 5, 1), an analog video broadcast signal (in figure 4, column 3, lines 55-62 with regard to video and column 4, lines 61-64) from S1 to E2, a digital signal (in figure 4, column 5, lines 3-5) from S2 to E2, another downstream signal (figure 5, from S4 to E4), counter propagating another signal (S3 to E4 in fig 5). In regard to the another downstream digital signal and the analog return signal, see column 5, lines 17-23 in which he teaches that the signals can be analog and digital in opposite directions form an exchanges to subscribers. It would have been obvious to have analog in opposite direction of digital in figure 4 since he teaches that this can be done. Further, the analog signal could obviously be considered a return signal. In regard to claim 54, Fussganger teaches the additional items claimed in claim 54. He teaches bidirectional common ports (connected to fibers 2 and 3). He teaches that the couplers (22, 23, 14 and 15) can be wavelength selective and therefore would have bandpass input/output ports (since the input/outputs would be limited to specific bands there inherently must be bandpass means, see column 6, lines 4-8). In that he teaches broadcast signals, it is inherent that he has a broadcast receiver. He teaches a drop device (element 15 in figure 5) and an add device (element 15 of figure 4). In regard to claims 19-23, the applicant claims well known obvious variants of types of signals. It is well known in subscriber systems to use

packet switched STM or ATM signals and would have been obvious in the system of Fussganger. In regard to claims 24 and 57-58, see column 6, lines 4-8. In regard to claims 25 and 34 see column 5, lines 17-23. It would have been obvious to add and/drop the signals, since Fussganger teaches that plural signals can be transmitted. The signal must in some way be multiplexed/demultiplexed. One well known way to multiplex and/or demultiplex is to add and/or drop the signals. In regard to claims 44 and 66, it appears that the apparatus of Fussganger provides the process of claims 44 and 66. This rejection is made in view of the above 112 rejection. Based on the claims, the two sections are in no way connected. The examiner has used two systems of Fussganger which reads on the claims. In regard to the wherein clause at the end of claim 54, it is well known to use small form factor pluggable devices in subscriber systems. In that the tow devices are in different systems (see 112 problem) it would have been obvious that they have different form factors, as systems often have different types of devices.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12, 19-25, 34, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giles (5633471) in view of Fussganger et al (4957339).

Regarding claim 12, Giles discloses: A method (Fig. 9), comprising:
propagating a downstream signal (e.g., signal from 90 to 98) on an optical signal conductor (e.g., fiber between 98 and 100) from an upstream combiner (e.g., 98) to a downstream combiner (e.g., 100); counter-propagating an upstream signal (e.g., signal

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from 91 to 100) on the optical signal conductor (e.g., fiber between 98 and 100) from the downstream combiner (e.g., 100) to the upstream combiner (e.g., 98), wherein the upstream signal includes a digital signal (col. 9, I. 27; col. 10, I. 35); propagating another downstream signal (e.g., signal from 90 to 99) on another optical signal conductor (e.g., fiber between 99 and 101) from another upstream combiner (e.g., 99) to another downstream combiner (e.g., 101), wherein the another downstream signal includes a digital signal (col. 9, I. 27; col. 10, I. 35); and counter-propagating another upstream signal (e.g., signal from 91 to 101) on the another optical signal conductor (e.g., fiber between 99 and 101) from the another downstream combiner (e.g., 101) to the another upstream combiner (e.g., 99). Giles does not expressly disclose: wherein the downstream signal includes an analog video broadcast signal; and wherein the another upstream signal includes an analog return signal.

However, the use of downstream and upstream analog signals is known in the art, as exemplified by Fussganger et al (as used in the above rejection). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ such analog and digital signal channels in opposite directions of a communications system in the system of Giles for the reasons taught by Fussganger (column 3, line 65-column 4, line 2).

Regarding claim 24, Giles in view of Fussganger et al discloses:

The method of claim 19, further comprising wavelength demultiplexing (Giles, upper demultiplexer in 92 in Fig. 9) the upstream signal after propagating the upstream signal on the optical signal conductor from the downstream combiner to the upstream combiner.

In regard to claims 19-23, the applicant claims well known obvious variants of types of

signals. It is well known in subscriber systems to use packet switched STM or ATM signals and would have been obvious in the system of Fussganger. In regard to claims 24 and 57-58, see column 6, lines 4-8 of Fussganger. Regarding claim 25, Giles teaches adding data from a customer premises (Giles, adding data from any suitable data source in 91 for the signal from 91 to 100) to the upstream signal before propagating the upstream signal on the optical signal conductor from the downstream combiner to the upstream combiner. Regarding claim 34, Giles teaches dropping data to a customer premises (Giles, dropping data to any suitable receiver in 93 for the signal from 90 to 99) from the another downstream signal after propagating the another downstream signal on the another optical signal conductor from the second upstream combiner to the another downstream combiner. In regard to claims 44 and 66, it appears that the apparatus of Fussganger provides the process of claims 44 and 66.

9. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giles in view of Fussganger as applied to the claims above, and further in view of Kim et al. (U.S. Patent No. 6,445,472 B1, hereinafter "Kim") and Schemmann et al. (U.S. Patent Application Publication No. 2006/0165413 A1, hereinafter "Schemmann").

Giles in view of Fussganger does not expressly disclose: conveying a signal from at least one of a plurality of users to an input port of the another downstream combiner as the another upstream signal. However, such a configuration is known in the art, as exemplified by Kim (Fig. 2, conveying an upstream signal from at least one of the users to an input port of 116). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement such a configuration for the method of the prior art of record. One of ordinary skill in the art would have been motivated to do this since the prior art of record is relatively silent about how each user might receive and transmit information through the system. Kim speaks into this silence with a typical example (col. 4, I. 1-3). Giles in view of Fussganger and Kim does not expressly disclose:

conveying a signal from at least one of the plurality of users to an input port of the another downstream combiner as the another upstream signal (emphasis Examiner's). That is, the prior art of record does not expressly disclose that the plurality of users of Giles in view of Fussganger is the same plurality of users of Giles in view of Fussganger and Kim. More exactly, the plurality of users of Giles in view of Fussganger receives broadcast signals, but Giles in view of Fussganger and Kim does not expressly disclose

the same. Nonetheless, the incorporation of broadcasting signals to a plurality of users that also conveys an upstream signal is known in the art, as exemplified by Schemmann (Fig. 1, broadcast signals of 106 to 134, which also conveys an upstream signal through 705). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate broadcasting signals with the same plurality of users of Giles in view of Fussganger and Kim. One of ordinary skill in the art would have been motivated to do this since Giles and Fussganger all discuss the application of cable TV systems (Giles, col. 1, I. 43-47) which are extremely well known to conventionally include broadcasting signals.

10. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Giles in view of Fussganger as applied to the claims above, and further in view of Shutterly (U.S. Patent No. 4,662,715).

Regarding claim 43, Giles in view of Fussganger does not expressly disclose: The method of claim 12, further comprising distributing at least a portion of the another downstream signal to a plurality of users and conveying a signal from at least one of the plurality of users to an input port of the downstream combiner as the upstream signal. These limitations correspond to the configuration of the add and drop buses with the associated users in Applicant's Fig. 1. However, this configuration is known in the art, as exemplified by Shutterly (buses with couplers and splitters in Fig. 2). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement this configuration of buses in the method of the prior art of record. One of ordinary skill in the art would have been motivated to do this since the prior art of record is relatively silent about how each user might receive and transmit information through the system. Shutterly speaks into this silence with a suitable example (col. 4, I. 1-3) that avoids the signal loss associated with other possible methods for signal distribution (col. 2, I. 61-63).

11. Claims 54, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giles in view of Fussganger and Shutterly as applied to the claims above, and further in view of Cubukciyan et al. (U.S. Patent No. 5,289,554, hereinafter "Cubukciyan").

Regarding claim 54, Giles in view of Fussganger and Shutterly discloses:

An apparatus (Giles, Fig. 9), comprising:

an upstream combiner including an upstream bi-directional common port (Giles, e.g., 98); an optical signal conductor coupled to the upstream bi-directional common port of the upstream combiner (Giles, e.g., fiber between 98 and 100); a downstream combiner including a downstream bi-directional common port (Giles, e.g., 100) coupled to the optical signal conductor (Giles, e.g., fiber between 98 and 100), wherein the downstream combiner directs an analog video optical carrier to a bandpass input-output port that is connected by an optical fiber (Giles, fiber(s) to receivers in 93 in Fig. 9) to an analog broadcast receiver (an upper receiver in 93 in Fig. 9 of Giles for receiving downstream analog of Fussganger); another upstream combiner including another upstream bi-directional common port (Giles, e.g., 99); another optical signal conductor coupled to the another upstream bi-directional common port of the another upstream combiner (Giles, e.g., fiber between 99 and 101);

another downstream combiner including another downstream bi-directional common port (Giles, e.g., 101) coupled to the another optical signal conductor (Giles, e.g., fiber between 99 and 101), wherein an optical output of an analog return transmitter (a transmitter in 91 in Fig. 9 of Giles for transmitting upstream analog of Fussganger connected by a separate optical transmission fiber (Giles, fiber(s) from 91 in Fig. 9) to an input-output port of the another downstream combiner (Giles, e.g., 101), which passes the analog return optical signal to the common port and then onto the another optical signal conductor (e.g., signal from 91 to 101 of Giles with the upstream analog of Fussganger a drop device coupled to a downstream output port of the another downstream combiner (Shutterly, e.g., 59 in Fig. 2); a customer premises equipment digital receiver input coupled to the drop device (Shutterly, 137 in Fig. 2), the customer premises equipment digital receiver input including an input optical connector (Shutterly, connection from 137 to 80); an add device coupled to a downstream input port of the downstream combiner (Shutterly, 46 in Fig. 2); and a customer premises equipment digital receiver output coupled to the add device (Shutterly, 132 in Fig. 2), the customer premises equipment digital receiver output including an output optical connector (Shutterly, connection from 78 to 132). Giles in view of Fussganger and Shutterly does not expressly disclose: wherein the input optical connector and the output optical connector define physically different, non-interchangeable form factors. However, such form factors for an input optical connector and an output optical connector are known in the art, as shown by Cubukciyan (notice the two physically different, non-interchangeable form factors at the end of input and output connectors 4 in Fig. 1). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ such form factors for the connectors of the prior art of record. One of ordinary skill in the art would have been motivated to do this since they provide suitable connections for a transceiver (Cubukciyan, col. 1, l. 47), and the connectors of the prior art of record are employed by a transceiver (Shutterly, "terminal devices" in Fig. 2 that transmit and receive, i.e., transceivers). Regarding claim 57, Giles in view of Fussganger, Shutterly, and Cubukciyan discloses: The apparatus of claim 54, further comprising a wavelength division multiplexer (Giles, the channel/wavelength labels for the middle two lasers in 90 should be switched with each other, and so would show wavelength multiplexing of f1 and f3 channels/wavelengths for the signal from 90 to 99) coupled to an upstream input port of the another upstream combiner. Regarding claim 58, Giles in view of Fussganger Shutterly, and Cubukciyan discloses: The apparatus of claim 54, further comprising a wavelength division demultiplexer (Giles, lower demultiplexer in 92 in Fig. 9) coupled to an upstream output port of the another upstream combiner.

12. Claims 55, 56, 60, 62, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giles in view of Fussganger, Shutterly, and Cubukciyan as applied to the claims above, and further in view of Atlas (U.S. Patent No. 6,097,533). Regarding claims 55 and 56, Giles in view of Fussganger, Shutterly, and Cubukciyan does not expressly disclose:
(claim 55) The apparatus of claim 54, further comprising an upstream input optical isolator coupled to an upstream input port of the another upstream combiner and an

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upstream output optical isolator coupled to an upstream output port of the another upstream combiner. (claim 56) The apparatus of claim 54, further comprising a downstream input optical isolator coupled to a downstream input port of the another downstream combiner and a downstream output optical isolator coupled to a downstream output port of the another downstream combiner.

However, optical isolators are known to be extremely common optical elements. Notice the use of optical isolators in Atlas (120 and 122 in Fig. 16) to produce combiners/circulators (110 in Fig. 16). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ optical isolators in the combiners/circulators of the prior art of record (Giles, 98-101 in Fig. 9). One of ordinary skill in the art would have been motivated to do this since the prior art of record is relatively silent about how to exactly implement the combiners/circulators of the prior art of record (Giles, 98-101 in Fig. 9). Atlas speaks into this silence with further details about a suitable implementation for these combiners/circulators of the prior art of record (Atlas, Fig. 16, col. 12, I. 59- col. 13, I. 15). Regarding claim 60, Giles in view of Fussganger, Shutterly, Cubukciyan, and Atlas discloses:

The apparatus of claim 54, further comprising an optical isolator coupled to the drop device (120 in Fig. 16 of Atlas in combiner/circulator 101 in Fig. 9 of Giles).

Regarding claim 62, Giles in view of Fussganger, Shutterly, Cubukciyan, and Atlas discloses:

The apparatus of claim 54, further comprising an optical isolator coupled to the add device (122 in Fig. 16 of Atlas in combiner/circulator 100 in Fig. 9 of Giles).

Regarding claim 66, Giles in view of Fussganger, Shutterly, Cubukciyan, and Atlas discloses: A cable access television network, comprising the apparatus of claim 54 (Giles, col. 1, I. 43-47).

Response to Arguments

13. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. The art rejection that is drawn to Fussganger is made in view of the 112 rejection. The rejections with regard to were made in the situation where the two separate systems as claimed are combined in a manner that the examiner anticipates that the applicant will correct the 112 error. If the applicant has questions concerning the 112 and/or art rejection, the applicant may call the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Pascal whose telephone number is 571-272-3032.

The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leslie Pascal/
Primary Examiner
Art Unit 2613